Important information about your data

Your genomic data and samples will be stored as part of your health record. DNA samples may be used anonymously for quality control. All data is kept securely and confidentially in line with UK law and NHS policy. More information can be found at www.england.nhs.uk/contact-us/privacy-notice

Information in this guide should be used to supplement professional advice specific to your circumstances. If you have any questions, it is important to ask your medical team or contact

Name.....

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Telephone Number/Email.....

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R430, R444.2 and R240 Inherited Prostate Cancer and PARP inhibitor treatment in prostate cancer

Patient Information Leaflet

NHS South West Genomic Laboratory Hub

V1.2 review date 07/2025

This leaflet has been written for people who are considering a genetic test following a prostate cancer diagnosis.

Why have I been offered a genetic test in prostate Cancer?

You are being offered this test because it may help to inform your cancer treatment. This test looks for any variants (genetic changes) in genes that influence prostate cancer.
Most prostate cancers are not caused by an inherited genetic condition. Those that are, may respond to specific treatments. Knowing the genetic make-up of a cancer can help your team select the best treatment.

What does the test include?

By looking at the genetic make-up of your cancer we might find out information about the genes you were born with. We want to give you a chance to discuss this, as it could give us information about your future health and that of your relatives.

This test looks for any variants (genetic changes) in genes that influence prostate cancer. We will look at a piece of your tissue for the somatic test and may ask for an additional blood sample for the germline test.

- **Somatic** tests look at the genetic sequence in your tumour sample. The genetic sequence of a tumour is often different to the other cells in our body.

Continued overleaf.....

This section is for any notes you'd like to make during your appointment

What results might I receive?

There are a number of different results;

1. Variant found in somatic sample only

Your tumour cells have a genetic change that makes them more responsive to certain drugs. This genetic variation is only present in your tumour. It is not inherited and family members do not need to be tested.

2. Germline variant found in germline sample

A variant is present in all the cells of your body, including your tumour. Your tumour cells may be more responsive to certain drugs. This variant may explain why you developed prostate cancer. You will be referred to Clinical Genetics for advice (see below for more detail). Your relatives can access testing to see if they have the same variant.

3. No somatic or germline variant found

The genetic sequence was unchanged in the genes tested. Your cancer is unlikely to have a genetic cause. This is the most common result.

4. Uncertain result

In a small number of cases, the results are unclear. It may be that a gene variant has been seen but that we don't know its effect. You will be referred to Clinical Genetics for further advice.

What is a germline variant?

If a germline variant is present, it tells us the following things:

- Your cancer may respond to specific medicines
- You have a genetic predisposition to prostate cancer
- You may have an increased risk of some other cancers
- Your relatives may also have this genetic predisposition

If a germline variant is found your specialist will refer you to the Clinical Genetics team. They can look at your family history in detail and provide tailored advice. They will ensure you understand what the genetic result means for you and can help you talk to your relatives about it.

What other cancers might be influenced by these genes?

Some of the genes that influence prostate cancer risk can also affect other cancers. For example:

- The BRCA1 and BRCA2 genes can influence breast, ovarian and pancreatic cancer risks.
- The Lynch syndrome genes can influence bowel, stomach, womb and ovarian cancer risks.

The exact risks vary between families. If a germline variant is found, the Clinical Genetics team will talk you through this in detail.

What would a germline variant mean for my relatives?

Germline variants are usually inherited from a parent. There is a 50% (1 in 2) chance of siblings and children having the same variant. The effect of a gene variant will depend on a number of factors, including: the specific gene, a person's age, their sex and family history. The Clinical Genetics service can look at this for you in detail. You are welcome to bring a family member with you to these appointments. There are good screening options available for families with a genetic predisposition.

What else might the test tell me?

By looking at the genetic make-up of your cancer we might find out information about the genes you were born with. We want to give you a chance to discuss this, as it could give us information about your future health and that of your relatives.

This is because a tumour picks up genetic changes (called variants) as it develops. Somatic variants cannot be passed on to relatives.

- **Germline** tests look at the genetic sequence you were born with. This sequence is the same throughout your body, except ing your tumour. Germline variants can be inherited from a parent, and can be passed on to a child. Germline tests are usually done on a blood sample.

Germline gene variant: present in **all** cells, heritable.

Somatic gene variant: not inherited, present only in **specific cells** e.g. tumour

No gene variant

Do I have to have a genetic test?

Please take time to ask all the questions that you need to. If you don't feel ready to have a test right now, your team can store a sample and revisit this with you at a later date. Some medications may need to be given by a specific point in treatment but you will always get the best possible health care, based on what we know about your cancer.